

Planning Alternative Corridors for Transmission (PACT)

A Web-based Decision-Support Tool for Transmission Line Siting

Linda Spiegel

PIER

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State Policy Recognizes Need for Better Transmission Planning Process

- The success of a state-wide planning effort will depend to a significant extent on ability to engage public stakeholders. **2004 IEPR**
- The state will reinvigorate its planning, permitting and funding processes to assure that necessary improvements and expansions to the grid are made on a timely basis. **Energy Action Plan 03**

PACT Project

- **Funding:** CEC Public Interest Energy Research, Facility Siting Division
- **Purpose:** To develop decision-support software to evaluate and communicate CEQA-equivalent alternative site analysis
- **Who:** SCE/Facet Decision Systems, Inc/Aspen Environmental
- **Schedule:** 2006-2008

Project Steering and Technical Advisory Committees

- **Agency Representatives:**

- CA Energy Commission, CPUC, US Forest Service, US BLM, Native American Heritage Commission, SF BCDC, US Dept. of Defense

- **Utility Representatives:**

- LADWP, PG&E, SMUD, SDG&E, SFPUC, SCE, Western Area Power Admin

- **Other Groups Represented:**

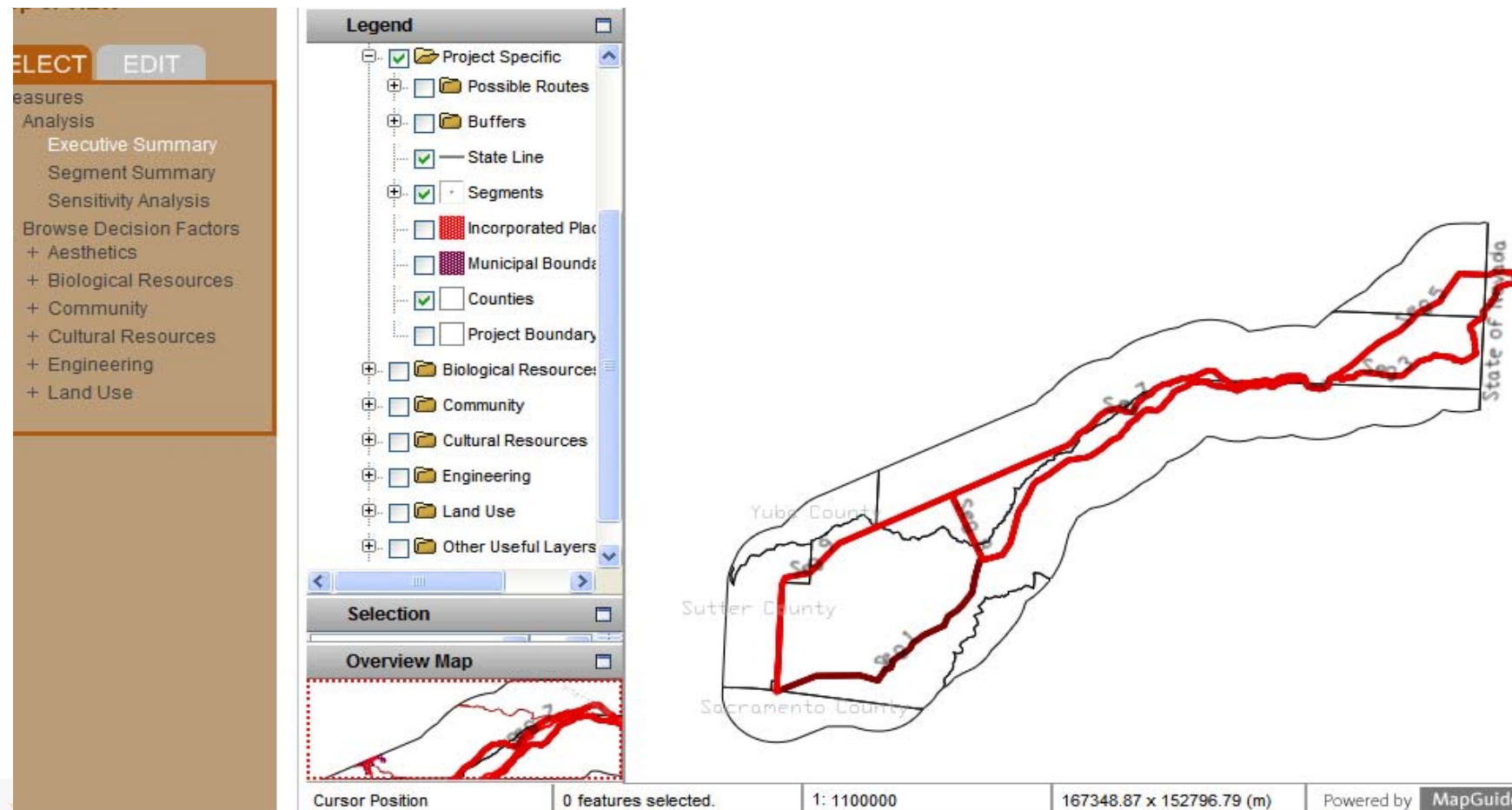
- CA Farm Bureau Federation, CAISO, CA Institute for Energy & the Environment, Energy Policy Initiatives Center, League of CA Cities, League of Women Voters, Regional Council of Rural Counties, So Cal Association of Governments



PACT Facilitates Siting Evaluations and Permitting

1. Maps identified corridors/routes
2. Screen and evaluate alternate routes- impacts and trade-offs
3. Documents assumptions and results
4. Involve interested stakeholders
5. Communicate results using transparent and common format

Define the Project Features



Collect and Input Data

The screenshot displays a GIS application interface. On the left is a vertical sidebar with a 'SELECT' tab and an 'EDIT' tab. Under 'SELECT', there are sections for 'Measures' (Executive Summary, Segment Summary, Sensitivity Analysis), 'Browse Decision Factors' (Aesthetics, Biological Resources, Community, Cultural Resources, Engineering, Land Use), and a list of categories with expandable icons. The main area features a 'Legend' panel with a tree view of layers including Municipal Boundaries, Counties, Project Boundary, Biological Resources, Habitat and Land, Preserves and C, Hydrology, Community, Electro Magnetic, Hospitals, Community C, and Elementry Sci. Below the legend is a 'Selection' panel with a dropdown menu and a 'No Selection' status. At the bottom left is an 'Overview Map' panel. The main map area shows a detailed map with a red boundary line and a purple shaded region. The map includes labels for 'BEALE AIR FORCE BASE' and 'HIGHLANDS'.

Collect Additional Data and Measure Factors for Each Alternative

- **Need comparable data on all route segments and related facilities**
- **Information derived from GIS data**
 - Identify the factors that are important (e.g., not all land use categories, but focus on commercial and industrial land use)
- **Field Data**
 - Augment GIS data for areas that are not traditionally mapped (e.g., soil contamination)
- **Expert judgment**
 - To represent more qualitative, less spatial, or more global information (e.g., ability to manage drainage or erosion)

Informative Output Screens

SAVE AS... SAVE

Step 2: COMPARE

None

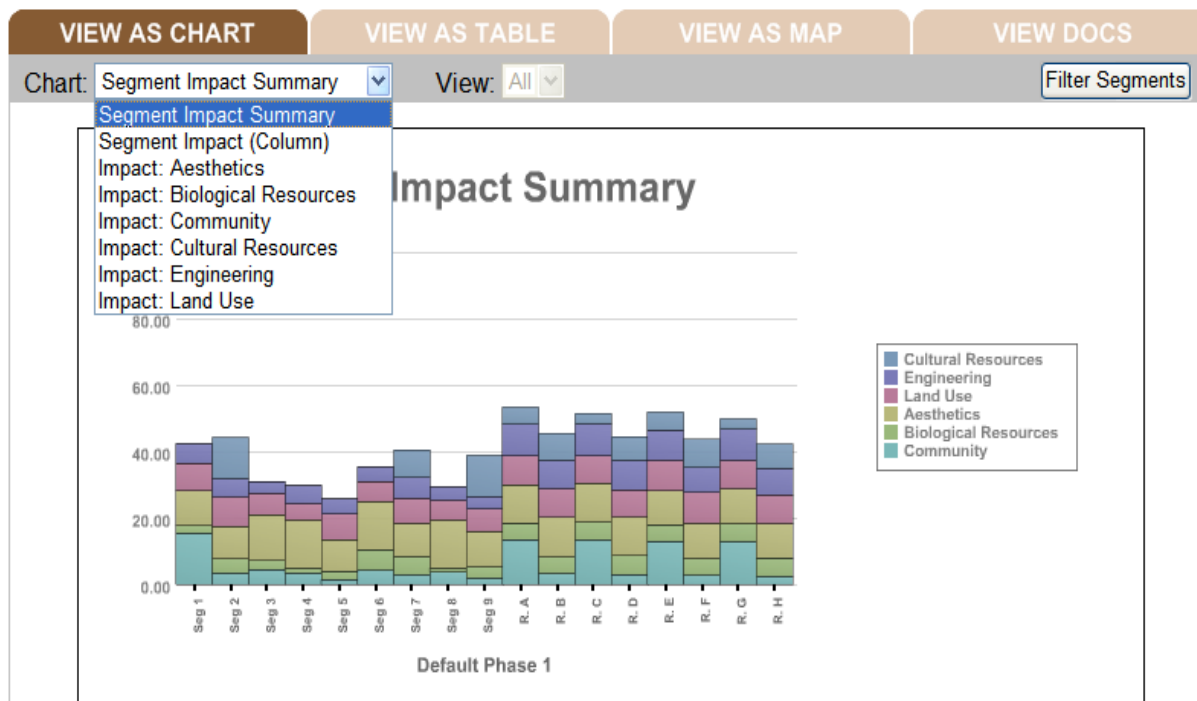
None

Apply

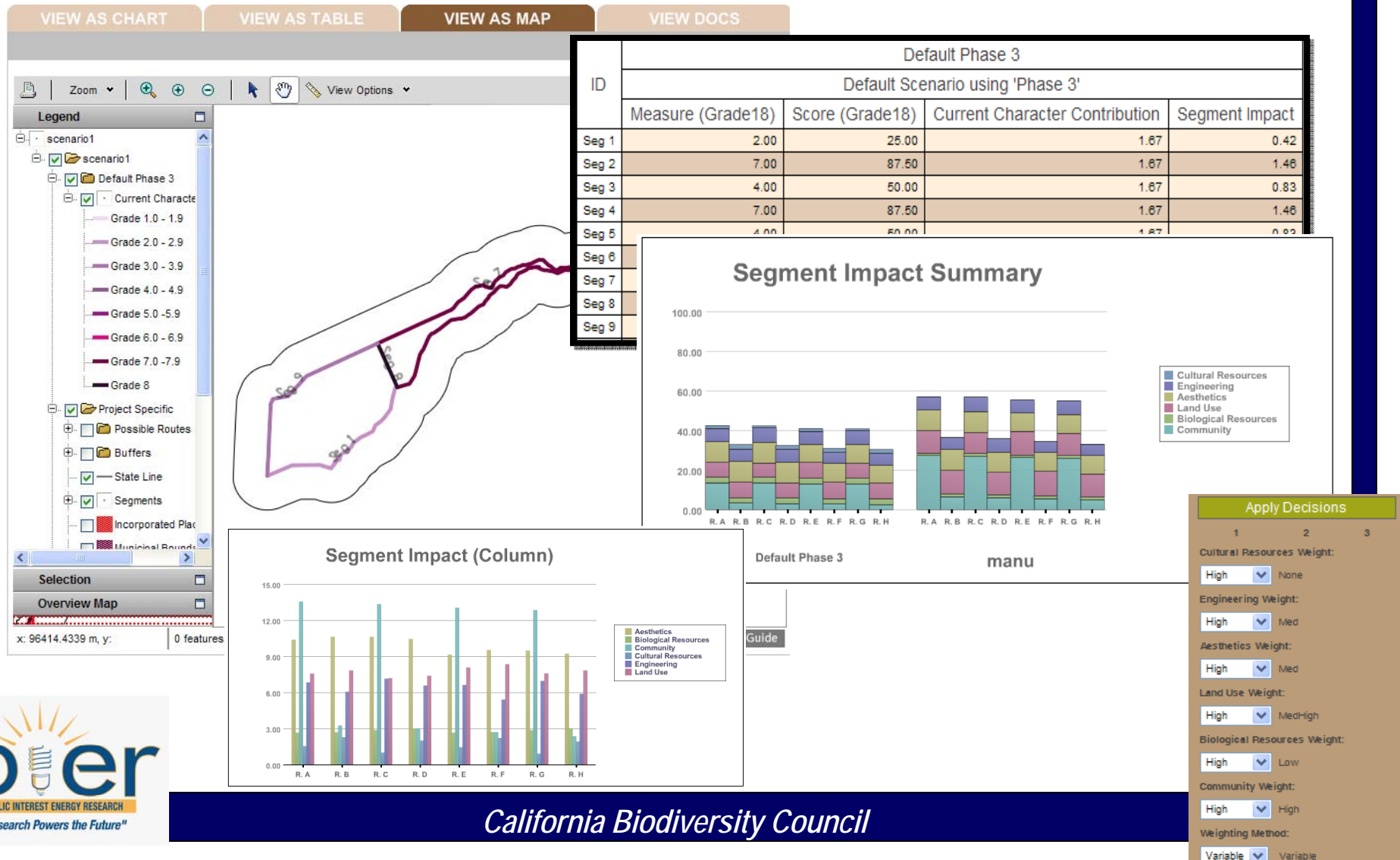
Step 3: VIEW

SELECT **EDIT**

- Measures
 - Analysis
 - Executive Summary
 - Segment Summary
 - Sensitivity Analysis
 - Browse Decision Factors
 - + Aesthetics
 - + Biological Resources
 - Community
 - + Community (sub)
 - + Electric and Magnetic Fields (EMF)
 - + Cultural Resources
 - + Engineering
 - + Land Use



Data Presented in Graphic, Tabular and Text Formats



Documentation Measures and Assumptions

Biological Resources a

will be measured on a scale from 1 to 5. A score of 1 is for a site with no known biological sensitivities, disturbed land (defined further as no threatened, endangered, or sensitive species (no species of concern or CNPS list, wetlands); disturbed habitat not suitable for threatened and endangered species. A score of 5 is for a site with high sensitivity, threatened and endangered species present, extensive mitigation required, likely opposition; and alternative sites recommended (further defined as threatened and endangered and/or FFS species, extensive mitigation, permit(s) difficult to acquire (permits include Incidental Take Authorization, USACE, 1600 Permits, etc.))

VIEW AS CHART VIEW AS TABLE VIEW AS MAP VIEW DOCS

Biological Resources a Description

Siting Goal:
To minimize biological effects

Calculation Method:
Field Grade

Grade:
Grades range from 1-5. A grade of 1 has the least impact while a grade of 5 has the most impact.

Proposed Curve:
More effect with higher score

SAVE AS... SAVE

Step 2: COMPARE

None

None

Apply

Step 3: VIEW

SELECT EDIT

Apply Decisions

1 2 3

Sensitivity Adjustment:
100%

Preference Curve:

1

1 5

EDIT

Biological Resources a Weight:
MedHigh

Method of Calcul:

likely opposition, and alternative sites recommended (further defined as threatened and endangered and/or FFS species, extensive mitigation, permit(s) difficult to acquire (permits include Incidental Take Authorization, USACE, 1600 Permits, etc.))

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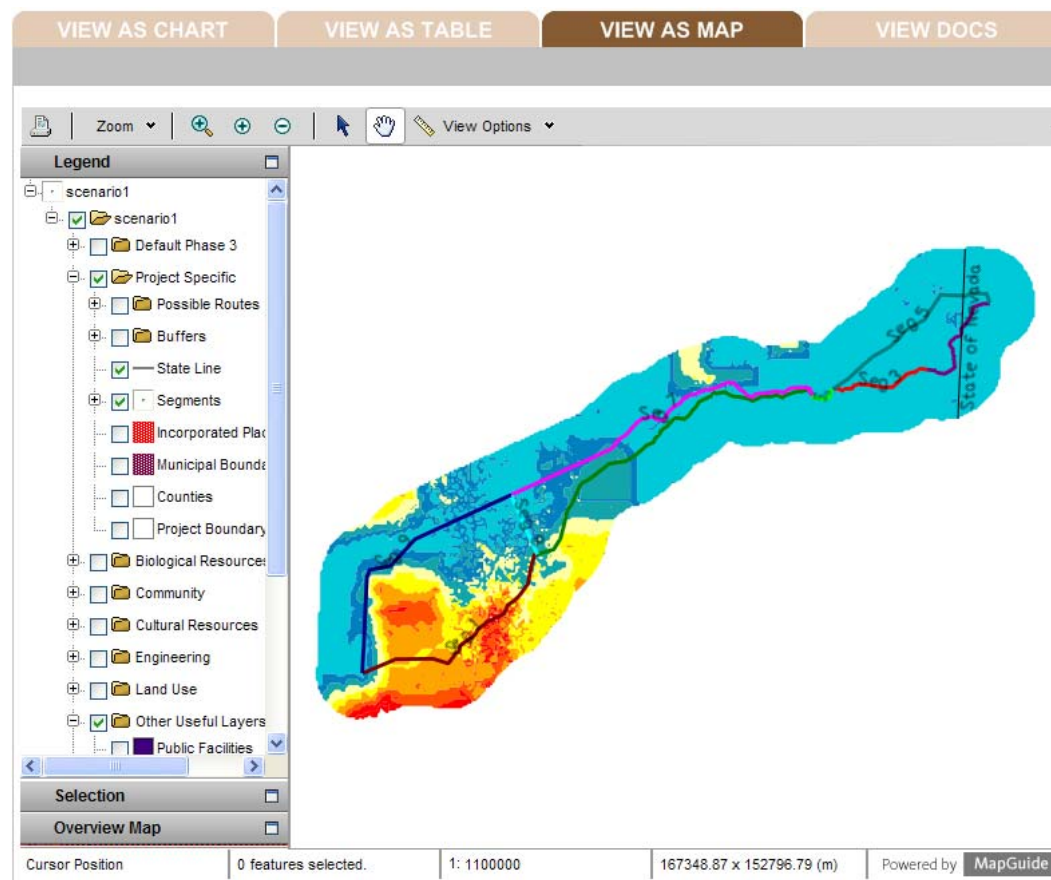
Grade:

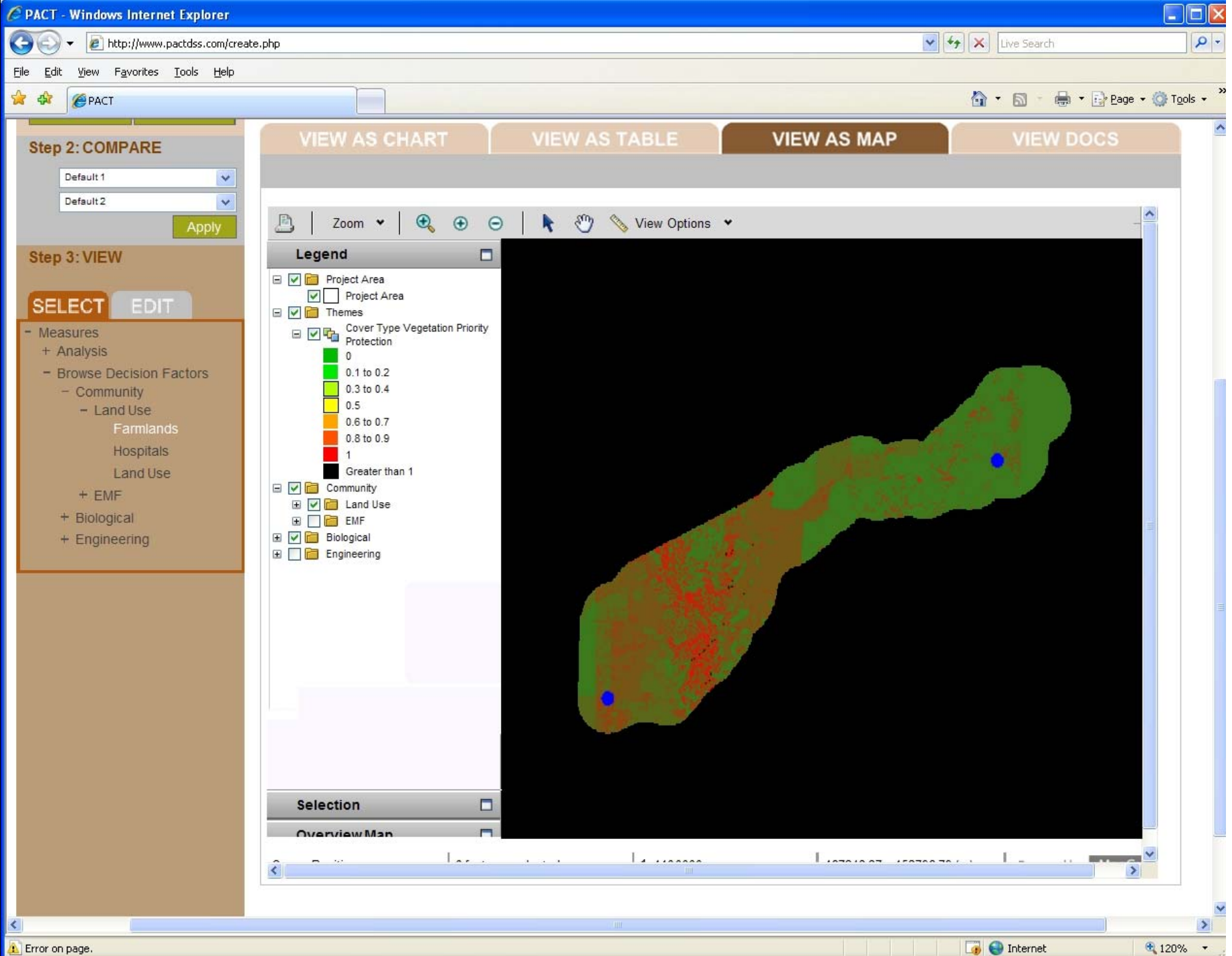
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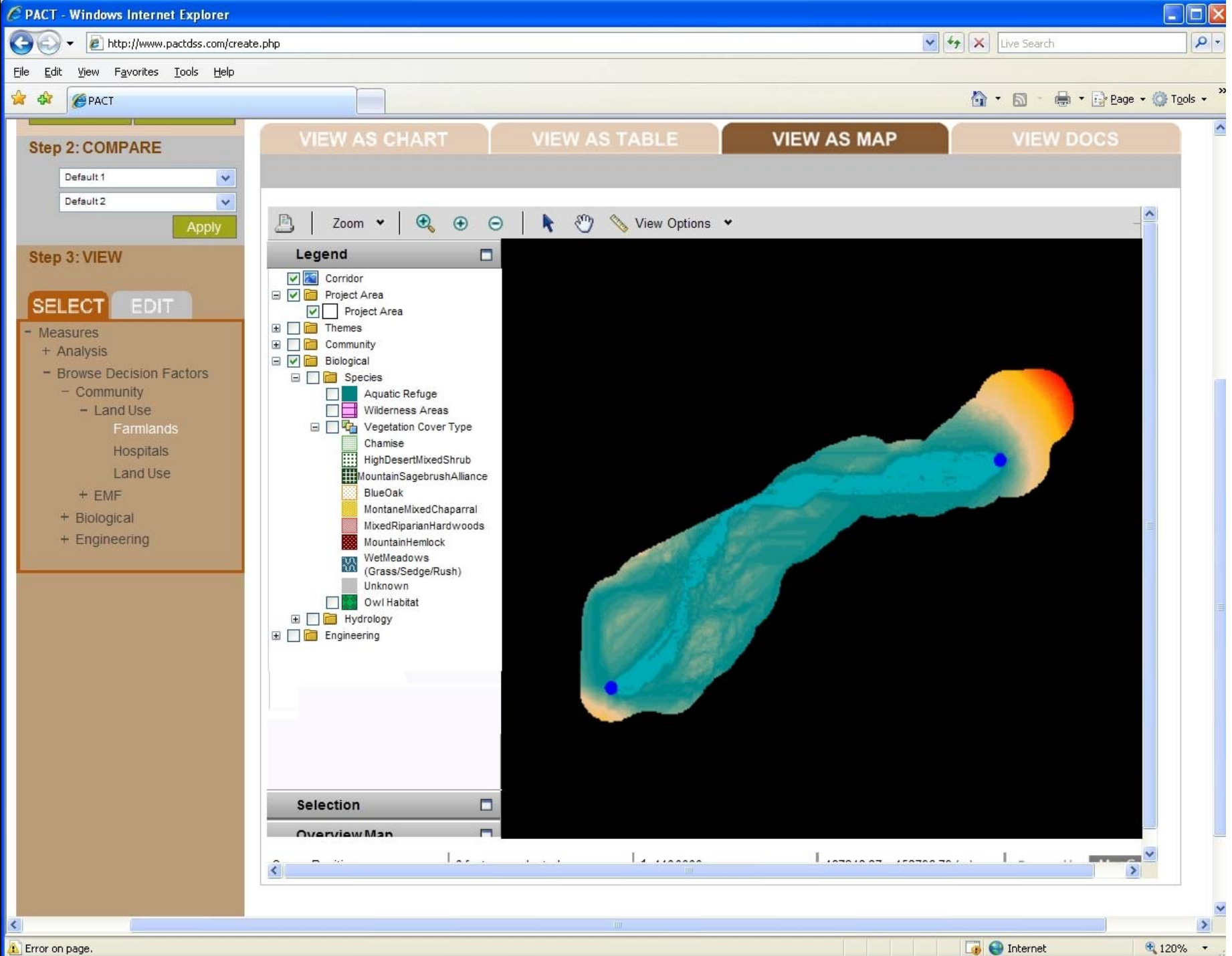
Proposed Curve:

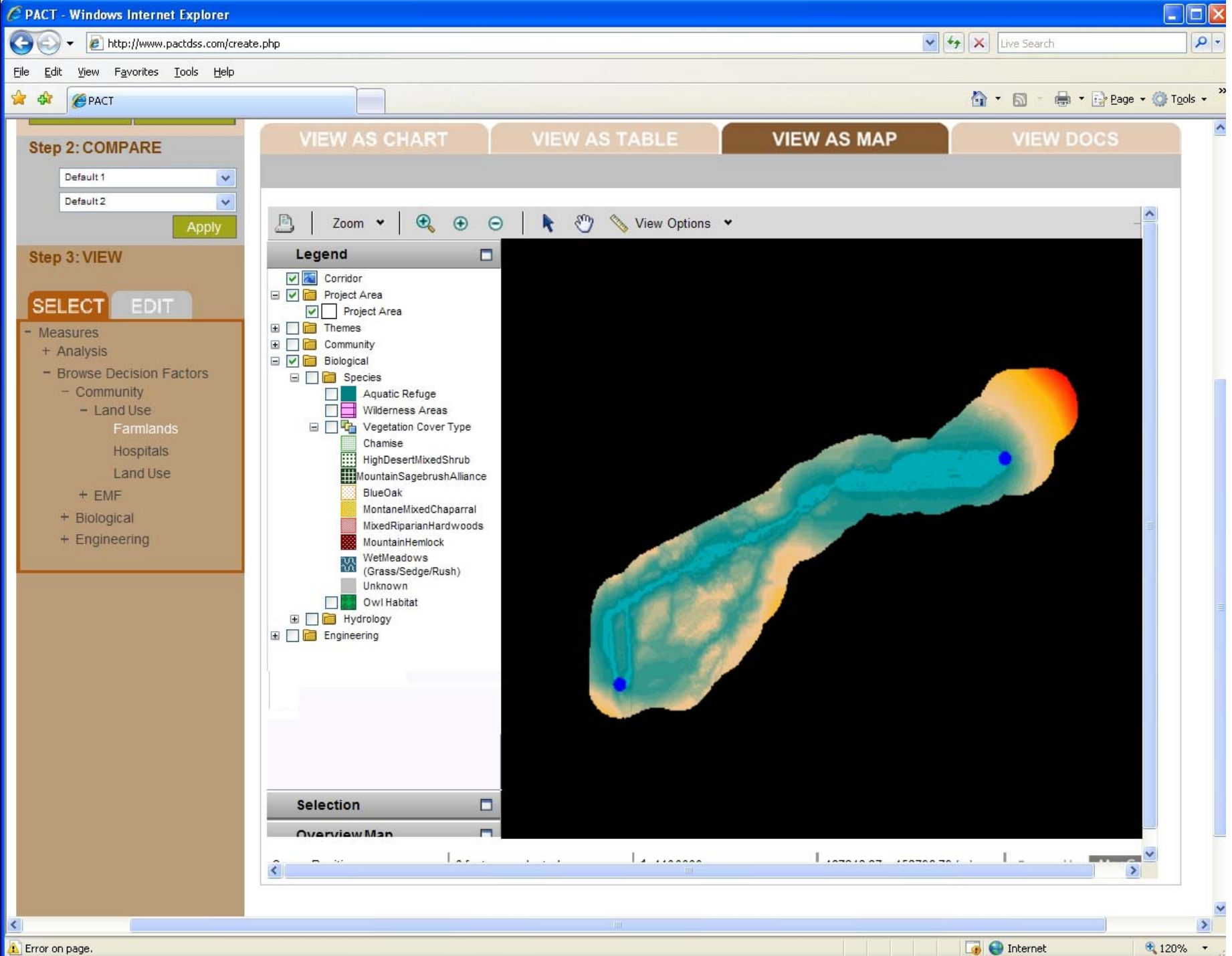
More effect with higher score

Corridor Planning Results









Necessary Teams

- Subject-matter experts
- Data facilitator to work with specialists and collect available data and their judgment
- GIS technician to prepare data for modeling
- Facilitator to help teams develop scenarios and interpret results

Potential Users of PACT

- Utility project planners
- Transmission line regulators
- Environmental review teams; data sharing and peer review
- Public and stakeholder groups
- Decision makers

Next Steps

- Validation using real project
- Desert Natural Communities Conservation Plan – CEC, CDFG, Facet
- Refine Model